



## INNOVATIVE CONTRACTING OPTIONS FOR RAPID BRIDGE REPAIR CONTRACTS

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**AKA**

**“GET IN – GET OUT- STAY OUT!”**

## OUTLINE

- Introduction
- Incentives/Disincentives
- A+B Bidding
- No-Excuse Bonus
- Summary

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## INTRODUCTION

- FHWA Road User Survey revealed:
  - 32% dissatisfied with work zones
  - Highway delay improvements related to Construction and Maintenance work zones in the top 3 out of 20 rated
- Road user impacts through work zones:
  - High accident rates
  - Travel delay costs
  - Additional fuel consumption

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## INTRODUCTION (continued)

- **Goals for using innovative contracting options:**
  - Timely delivery of a quality project/facility with limited/minimized road user impacts
  - Address costs which would be incurred by road users that are not directly identified or accounted for in traditional contracts

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## INTRODUCTION (continued)

- **Innovative Contracting Options:**
  - **Used by Virginia**
    - Incentives/Disincentives
    - A+B Bidding
    - No-Excuse Bonus

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## INTRODUCTION (continued)

- **Simplified calculations for Road User Cost (RUC)**
  - **Vehicle Operating costs**
    - $ADT \times \text{Delay time} \times \text{Vehicle Operating Cost/mile}$
  - or
  - **Lost Productivity costs**
    - $ADT \times \text{Avg passenger per vehicle} \times \text{Delay} \times \text{min. hourly wage}$

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## DRAFT ROAD USER COST



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## INCENTIVES/DISINCENTIVES

- **Definition from**
  - **Division I, Section 101 2007 Road and Bridge Specifications**
    - A verifiable monetary amount used to encourage the Contractor to complete work prior to the milestone dates and/or the time limit specified in the Contract.
- **How to Determine the Amount of Incentives/Disincentives**
  - **Based on Road User Costs (RUC)**
    - Not Liquidated Damages
    - Must be justifiable
      - Incentive and disincentive amounts should match
  - **Amount Sufficient to encourage accelerated schedule**
  - **Maximum incentive should not exceed 5% of total contract amount**
  - **Incentive and disincentive amounts should match**

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## INCENTIVES/DISINCENTIVES (continued)

- **Criteria for Selection**
  - **Incentive/Disincentive Phase to be complete in one construction season or less**
- **Benefits**
  - **Reduce Construction time**
  - **Lower contract administration costs**
  - **Project finishes earlier than expected**
  - **Improve public relations**
  - **Increase Contractors' interest**

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## PROJECT OPPORTUNITY?



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## INCENTIVES/DISINCENTIVES (continued)

- **Drawbacks**
  - May require additional funding
  - Negotiating adjustments difficult with contract changes
- **Project Selection**
  - **Good Candidates**
    - Bridge rehabilitation projects with high road user or business impacts
      - Urban reconstruction
      - Bridge replacement
      - Detour
      - Redecking or superstructure replacement
    - A+B Projects combine with Incentive/Disincentive
    - Projects with commitments to open a bridge as quickly as possible

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**INCENTIVES/DISINCENTIVES (continued)****– Poor Candidates**

- New construction projects with minimal impacts on road users
- Projects where right-of-way or utilities issues not clearly identified
- Steel fabrication-long lead time
  - Third party supplier with limited flexibility
- Landscaping
  - establishment planting times are seasonally controlled

**– Things To Consider**

- Requires use of a good schedule to measure progress and identify impacts
- Time extensions should not be given unless overruns occur on major critical items of work
- Prepare Department staff for an aggressive contract schedule (overtime, multiple shifts)

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**INCENTIVES/DISINCENTIVES (continued)**

**Example available in handout**

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## INCENTIVES/DISINCENTIVES (continued)

### PAST PROJECTS USED ON:

- **BRIDGE CROSSING OVERALL RUN**
  - 0340-069-V20,C503,B606; 0340-093-V19,C501 (YR AD 2006)
- **SUPER/SUBSTRUCTURE REPAIRS OVER NS RAILWAY AND NORTH FORK ROANOKE RIVER**
  - (NFO)BR06-060-114, M400; (NFO)BR06-060-115, M400 (YR AD 2007)
- **RTE 340 - BRIDGE REPLACEMENT AT JEREMY'S RUN**
  - (NFO)0340-069-V20 C502, B605 (YR AD 2007)

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## A + B BIDDING

### • Definition

- **Define**
  - Cost plus time bidding
    - “A”-Traditional dollar amount for contract items
    - “B”- Calendar days bid to complete the work multiplied by daily RUC
      - » B converts to new Contractor determined fixed completion date
- **Determine the amount**
  - $(A) + (B \times [\text{Road} - \text{User Cost/Day}]) = \text{Total Bid}$
  - Lowest bid for award
  - Award amount is limited to the “A” portion of the bid after award
  - Can be coupled with Incentive/Disincentive based upon length of time bid to complete (I/D based around new fixed date)
    - » Cap placed for budgeting project on incentive

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## A + B BIDDING (continued)

### • Criteria

- High RUC
- Safety/Emergency concerns or significant impacts to local community
- Traffic control costs
- Relatively free of third party conflicts
- Public interest expressed to expedite project
- B portion should be large enough to influence bids
  - Example B portion based on \$3000/day max days set at 10 calendar days may not be enough to affect bidding on a medium size project (\$30,000 cap)

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## A + B BIDDING (continued)

### • Benefits

- Increase bidders Interest
- Encourages acceleration to achieve bid time thereby less construction rehabilitation time
- Improved coordination between Prime & subs
  - May require longer advertisement for Contractors to develop more detailed thought out bids
- Encourages better scheduling
- Minimize impact on road users
- Encourages Contractors to be more innovative to reduce time
- In Urban areas reduce congestion, pollution & environmental impact

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## A + B BIDDING (continued)

- Drawbacks

- Numerous changes to contract nullify advantages
  - Require good set of plans and accurate quantities
- May require more resources for contract administration
- Overtime for inspection of night work & multiple crews
- Negotiation adjustment difficult with contract changes
- Not to be used routinely, reserve for high volume facilities especially in urban areas; major reconstruction or rehabilitation on existing facility
- Time is money
  - Must continually monitor and document time as though it is a pay item.

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## A + B BIDDING (continued)

- Project Selection

- Good Candidates
  - Major bridges that will be out of service
  - Mill and Overlay (Fill)
  - Un-bonded concrete overlays
  - Detours
    - Length projects with especially high volumes of traffic
  - New construction and reconstruction
  - Bridge painting
  - Bridge rehabilitation

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## A + B BIDDING (continued)

### – Poor Candidates

- Restricted site access
- Delayed NTP or likelihood of such
- Redecking of bridges
- Landscaping
- Utility or Right of Way issues unresolved
- High probabilities for additional work on contract
  - Additional bridge repairs required
- Numerous or complex work limitations
  - Added or revised lane closures

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## A + B BIDDING (continued)

### • Things to Consider

- Advantage may be lost if third party involvement
- Does project require multiple levels of review of submittals
- Clarity of work to be performed
  - Emphasis of quality of plans
  - Thoroughness, minimize risks

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## A + B BIDDING (continued)

Example available in handout

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## A + B BIDDING (continued)

### PAST PROJECTS USED ON:

- RTE 95 - GROUND IMPROVEMENT CONTRACT #1 FOR RTE 1  
INTRCHANGE WOODROW WILSON BRIDGE
  - 0095-96a-106,C501 (YR AD 2001)
- RTE 95 - INTERCHANGE MODIFICATION - PHASE 5
  - 0095-029-F20, C518, B649, B637, B648, B638, B642, B623, D679  
(YR AD 2001)
- RTE 95 - ADVANCE BRIDGE CONTRACT FOR ROUTE 1  
INTRCHANGE WOODROW WILSON BRIDGE
  - 0095-96A-106,C520, B631, B634, B632, B633, B627, BRDGS,  
B626, B629, B640, B642, B628, B641 (YR AD 2003)
- LATEX OVERLAY
  - BR07-030-306,C501 (YR AD 2008)

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## NO-EXCUSE BONUS

- **Define**
  - Tied Bonus to accelerated completion of construction activities, construction phases or major milestones by set date where Contractor assumes all risks for completion and waives right to claim
- **Determine Bonus amount**
  - Road User Cost
    - Amount must consider cost of all known and potential risks
    - Amount must be set high enough to generate interest to attract bidders
- **Criteria**
  - High volume urbanized project where delays or impacts have major significance to public

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## NO-EXCUSE BONUS (continued)

- **Benefits**
  - Reduced construction time
  - Increased Bidders interest
  - Better coordination between Primes and Sub-contractors
  - More innovative techniques
- **Drawbacks**
  - Quality of work
  - Waive all rights to claim
  - Strained Department-Contractor relations
  - Difficulty in negotiating Department change orders

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## NO-EXCUSE BONUS (continued)

- **Project Selection**

- Used on very unique projects
- Large scale complex project with very high traffic volumes

- **Things to Consider**

- Heightened Inspection
  - To reduce cutting corners
- Clearly defined and comprehensive
- Bonus must be factored into project budget

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## NO-EXCUSE BONUS (continued)

**Example available in handout**

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## NO-EXCUSE BONUS (continued)

### PAST PROJECTS USED ON:

- RTE 150 (CHIPPENHAM PKWY) - WIDEN TO 6 LANES  
– 0150-020-F10,C502,B642 (YR AD 1998)
- ROUTE 95 - I-495 WB ROADWAY AND RAMP IMPROVEMENTS  
– 0095-029-F20,C502,BR. (YR AD 1998)
- VA-6/7 WOODROW WILSON  
– 0095-96A-106, C504 (YR AD 2003)
- Route 64 SUPERSTRUCTURE WIDENING & REPLACEMENT INCLUDING APPROACHES (CSX/ACCA YARD)  
– 0064-043-122, C501, B683, B694 (YR AD 2004)

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## SUMMARY

- Incentive/Disincentive
  - VDOT has had the most use and success out of the three present contracting options
  - Easier to administer
    - Tied directly to specific date(s) for delivery of specific element, portion of the work, early completion
    - Deliverables must be clearly and specifically defined to identify if achieved or failure to perform
    - Amount of incentive must be consistent with costs incurred to achieve desired results
    - Incentive dates should be aggressive, reasonable and consistent with overall contract duration
    - Require proper scheduling to achieve best pool of bidders
    - CO Scheduling & Contract Administration to discuss advertisement strategy of projects with Incentive/Disincentive

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